

**Notice of Allowability**

Application No.

09/888,890

Examiner

Antonio A Caschera

Applicant(s)

HARKIN, PATRICK A.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to After-final Amendment filed, 04/07/05.
2. ☒ The allowed claim(s) is/are 3-8, 11-16, 18, 19, 21-25, 27, 28, 30-36, 41-52, 54, 55, 57, 58, 60-63 and 67-81.
3. ☒ The drawings filed on 31 August 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 3-8, 11-16, 18, 19, 21-25, 27, 28, 30-36, 41-52, 54, 55, 57, 58, 60-63 and 67-81 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In reference to claims 3 and 11, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose evaluating a sign of the cross product term and the orientation variable to determine whether to cull the data prior to rendering an image of at least a portion of the digital object, in combination with the further limitations of claims 3 and 11 respectively.

In reference to claims 4-8 and 12-16, claims 4-8 and 12-16 depend upon allowable to claims 3 and 11 respectively and are therefore also deemed allowable.

In reference to claims 21 and 30, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose determining the orientation of at least one polygon based on the sign of the cross produce term and the orientation decision variable, in combination with the further limitations of claims 21 and 30 respectively.

In reference to claims 18, 19 and 22-25, claims 18, 19 and 22-25 depend upon allowable to claim 21 and are therefore also deemed allowable.

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In reference to claims 27, 28 and 31-34, claims 27, 28 and 31-34 depend upon allowable to claim 30 and are therefore also deemed allowable.

In reference to claim 35, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose changing the sign of a cross-product term if the sign does not correspond to an actual orientation of a corresponding polygon, in combination with the further limitations of claim 35.

In reference to claims 36 and 41-48, claims 36 and 41-48 are dependent upon allowable claim 35 and are therefore also deemed allowable.

In reference to claim 49, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose considering the orientation decision variable in determining whether the polygon is front facing or back facing based at least in part on an actual orientation of at least three vertices of the polygon, a sign of said cross product term and a sorted order of said at least the three vertices, in combination with the further limitations of claim 49.

In reference to claims 50-52, 54, 55, 57 and 58, claims 50-52, 54, 55, 57 and 58 are dependent upon allowable claim 49 and are therefore also deemed allowable.

In reference to claim 67, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose determining whether a polygon's

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orientation has changed evaluating the sign of a cross-product calculation and an orientation decision variable, in combination with the further limitations of claim 67.

In reference to claims 60-63 and 68, claims 60-63 and 68 are dependent upon allowable claim 67 and are therefore also deemed allowable.

In reference to claim 69, the prior art of record (Penna (U.S. Patent 6,222,556 B1), Takeda et al. (U.S. Patent 5,748,198), Landau et al. (U.S. Patent 6,529,207 B1) and Baltaretu et al. (U.S. Patent 6,437,780 B1)) does not explicitly disclose determining positional difference between adjacent vertices of each polygon following sorting the vertices and then determining a cross product term for each polygon from said positional differences, in combination with the further limitations of claim 69.

In reference to claims 70-81, claims 70-81 are dependent upon allowable claim 69 and are therefore also deemed allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

2. Applicant has amended several previously objected to dependent claims and has rewritten them into independent form including all of the limitations of the claims from which they previously were dependent upon. In particular claims 3, 11, 21, 30 and 67 have been rewritten in independent form and all other claims have been rewritten to reflect dependencies on these

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newly formed independent claims. Therefore, previous rejections based upon prior art have been withdrawn from these claims. Also, claims 35, 36, 41-52, 54, 55, 57, 58 and 69-81 were previously allowed making the application in condition for allowance.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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A handwritten signature in black ink, reading "Matthew C. Bella". The signature is written in a cursive style with a large, stylized "M" and "B".

MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600